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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,169	09/24/2003	I-Kai Pan	PANI3002/EM	4034
23364	7590	06/29/2004	EXAMINER	
BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			TSIDULKO, MARK	
			ART UNIT	PAPER NUMBER
			2875	

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/668,169

Applicant(s)

PAN ET AL.

Examiner

Mark Tsidulko

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11 and 13-15 is/are rejected.
- 7) ☒ Claim(s) 10 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “*light enhancement unit*” must be shown with reference number or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: it is unclear what Applicant intends by “light enhancement unit”. Specification does not provide this with reference number. Appropriate correction is required.

Claim Rejections - 35 USC § 112

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is indefinite:

1. What is a "light enhancement unit"?
2. How does it raise the semi-brightness angle?
3. What is the semi-brightness angle?

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 8, 9, 12, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agano (US 6,327,091) in view of Imai et al. (US 4,425,604).

Referring to Claims 1 and 2 Agano discloses (Figs. 1, 2) a backlight system having a plurality of light sources [19] which are not limited to any particular types (col.5, lines 22-29), a reflective housing [18] adjacent to the light sources for receiving the light sources and reflecting the light.

Agano discloses the instant claimed invention except for arc sheet locating at the periphery of the light source.

Imai et al. disclose (Figs. 2, 3) the arc sheet locating at the periphery of the light source in order to provide uniform illumination (col. 1, lines 58-62).

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Referring to Claim 3 Agano discloses (Fig.2) the light sources arranged parallel and equally spaced.

Referring to Claim 4 Agano discloses that the housing may be made of plastic or metal. Since the plastic housing may be made only using the molding process, it is understood that an extrusion, as one of the types of the molding process may be applied. In case of metal, a stamping operation (drawing or deep drawing) should be used to form the housing having four sidewalls.

Referring to Claim 5 Agano discloses that the housing is coated with a reflecting and diffusing material (col.4, lines 53-63).

Referring to Claim 8 Agano discloses the instant claimed invention except for that the arc sheet has a curvature diameter longer than the diameter of the light source.

Imai et al. disclose the arc sheet [4] wherein a curvature diameter of the arc is longer than the diameter of the light source [2].

Referring to Claim 9 Agano discloses the instant claimed invention except for two arc sheets are mounted at the periphery of the light sources.

Imai et al. disclose (Fig.2) two arc sheets [4-1] and [4-2] mounted at the periphery of the light sources.

Referring to Claim 12 Agano discloses a LCD [12].

Referring to Claim 15 Agano discloses the instant claimed invention except for two arc sheets are not in the same plane.

Imai et al. disclose (Fig.2) two arc sheets being not in the same plane.

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It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the arc sheet locating at the periphery of the light source, as taught by Imai et al., for the device of Agano, in order to provide uniform illumination.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Agano and Imai et al. as applied to claim 1 above, and further in view of Mephram et al. (US 5,253,151).

Agano et al. discloses the instant claimed invention except for that arc sheet is made of total reflection.

Mephram et al. disclose an arced reflection sheet [22] made of total reflection, since reflects all possible rays (col.4, line s 59-63).

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the reflection sheet of the device of Agano et al. made of total reflection, as taught by Mephram et al., in order to increase the reflective characteristics:

Claims 11 and 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Agano and Imai et al. as applied to claim 1 above, and further in view of Davis et al. (US 5,822,029).

Referring to Claim 11 Agano et al. discloses the instant claimed invention except for that the two reflecting sheets are in the same plane.

Davis et al. disclose a reflector [12] wherein two relative reflective surfaces are in the same plane.

Referring to Claim 13 Agano et al. discloses the instant claimed invention except for metallic reflector.

Davis et al. disclose an illumination system having metallic reflector.

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It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the reflector made of metal, as taught by Davis et al. for the device of Agano et al. in order to reflect the light emitted from the light sources.

Allowable Subject Matter

Claims 10, 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

Referring to Claim 10 the prior art of record fails to show that the angle included by the two arc sheets ranges from 30 degrees to 270 degrees.

Referring to Claim 12 the prior art of record fails to show two arc sheets having different thickness.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Tsidulko whose telephone number is (571)272-2384. The examiner can normally be reached on 8 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for all communications.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M.T.
June 25, 2004



ALAN CARIASO
PRIMARY EXAMINER